

WHAT IS CLAIMED IS:

1. A variable optical attenuator comprising:

a right-handed switchable CLC polarizer and a left-handed switchable CLC polarizers,

and

5 an electric driver for driving the polarizers,

wherein when the electric fields on both polarizers are off, the polarizers serve as two reflective mirrors, which reflect left-hand circularly polarized light by LH CLC polarizer and right-hand circularly polarized light by RH CLC polarizer, and

wherein when the fields are turned on, the two polarizers are switched into two transparent

10 sheets allowing light to transmit therethrough; and

whereby continuously changing the voltages on the two polarizers electrically adjusts the attenuation.

2. The variable optical attenuator as in claim 1, comprising an electrical driver for each

polarizer.

3. A variable optical attenuator comprising:
 - a first and second switchable CLC polarizer of the same handedness;
 - a half-wave plate between the first and second switchable CLC polarizers for converting the transmitted light from the first polarizer into opposite handedness,
 - 5 an electric driver for driving the polarizers, wherein when the electric fields on both polarizers are off, the polarizers serve as two reflective mirrors, which reflect the same handedness circularly polarized light by the first polarizer, converts the opposite handedness circularly polarized light to the same handedness circularly polarized, and reflects the converted the same handedness circularly polarized by
 - 10 the second polarizer, and wherein when the fields are turned on, the two polarizers are switched into two transparent sheets allowing light to transmit therethrough; and whereby continuously changing the voltages on the two polarizers electrically adjusts the attenuation.
4. The variable optical attenuator as in claim 3, comprising an electrical driver for each polarizer.